

In the Claims

1. (Currently Amended) A hot-rolled steel strip having superior low temperature toughness and weldability for a high strength electric resistance welding pipe, comprising: on a mass percent basis,
 - about 0.005 to about 0.04% of C;
 - about 0.05 to about 0.3% of Si;
 - about 0.5 to about 2.0% of Mn;
 - about 0.001 to about 0.1% of Al;
 - about 0.001 to about 0.1% of Nb;
 - about 0.001 to about 0.1% of V;
 - about 0.001 to about 0.1% of Ti;
 - about 0.03% or less of P;
 - about 0.005% or less of S;
 - about 0.006% or less of N;
 - at least one selected from the group consisting of about 0.5% or less of Cu, about 0.5% or less of Ni, and about 0.5% or less of Mo; and
 - the balance being Fe and incidental impurities,wherein P_{cm} represented by the following equation (1) is 0.17 or less:
$$P_{cm} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$
Equation (1),
in which (%M) indicates the content of element M on a mass percent basis, and
the hot-rolled steel strip is composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more and having a yield strength of at least 560 MPa.

2. (Original) The hot-rolled steel strip according to Claim 1;
wherein the ratio in percent of the amount of precipitated Nb to the total amount of Nb is
from about 5 to about 80%.

3. (Original) The hot-rolled steel strip according to Claim 1;
further comprising about 0.005% or less of Ca and/or REM on a mass percent basis.

4. (Original) The hot-rolled steel strip according to Claim 2;
further comprising about 0.005% or less of Ca and/or REM on a mass percent basis.

5. (Original) The hot-rolled steel strip according to Claim 1;
further comprising at least one component selected from the group consisting of about 0.1%
or less of Cr and about 0.003% or less of B,

wherein $P_{cm'}$ represented by the following equation (2) is 0.17 or less:

$$P_{cm'} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

6. (Original) The hot-rolled steel strip according to Claim 2;
further comprising at least one component selected from the group consisting of about 0.1%
or less of Cr and about 0.003% or less of B,

wherein $P_{cm'}$ represented by the following equation (2) is 0.17 or less:

$$P_{cm'} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

7. (Original) The hot-rolled steel strip according to Claim 3;

further comprising at least one component selected from the group consisting of about 0.1% or less of Cr and about 0.003% or less of B,

wherein Pcm' represented by the following equation (2) is 0.17 or less:

$$\text{Pcm}' = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

8. (Original) The hot-rolled steel strip according to Claim 4;

further comprising at least one component selected from the group consisting of about 0.1% or less of Cr and about 0.003% or less of B,

wherein Pcm' represented by the following equation (2) is 0.17 or less:

$$\text{Pcm}' = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

9.- 16. (Cancelled)

17. (New) A hot-rolled steel strip having superior low temperature toughness and weldability for a high strength electric resistance welding pipe, comprising: on a mass percent basis,

about 0.005 to about 0.04% of C;
about 0.05 to about 0.3% of Si;
about 0.5 to about 2.0% of Mn;
about 0.001 to about 0.1% of Al;
about 0.001 to about 0.1% of Nb;
about 0.001 to about 0.1% of V;
about 0.001 to about 0.1% of Ti;
about 0.03% or less of P;
about 0.005% or less of S;
about 0.006% or less of N;
at least one selected from the group consisting of about 0.5% or less of Cu, about 0.5% or less of Ni, and about 0.5% or less of Mo; and

the balance being Fe and incidental impurities,

wherein Pcm represented by the following equation (1) is 0.17 or less:

$$\text{Pcm} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (1),

in which (%M) indicates the content of element M on a mass percent basis, and

the hot-rolled steel strip is composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more and having a CTOD value of 0.25 mm or more.

18. (New) The hot-rolled steel strip according to Claim 17;

wherein the ratio in percent of the amount of precipitated Nb to the total amount of Nb is from about 5 to about 80%.

19. (New) The hot-rolled steel strip according to Claim 17;
further comprising about 0.005% or less of Ca and/or REM on a mass percent basis.

20. (New) The hot-rolled steel strip according to Claim 18;
further comprising about 0.005% or less of Ca and/or REM on a mass percent basis.

21. (New) The hot-rolled steel strip according to Claim 17;
further comprising at least one component selected from the group consisting of about 0.1%
or less of Cr and about 0.003% or less of B,

wherein P_{cm}' represented by the following equation (2) is 0.17 or less:

$$P_{cm}' = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

22. (New) The hot-rolled steel strip according to Claim 18;
further comprising at least one component selected from the group consisting of about 0.1%
or less of Cr and about 0.003% or less of B,

wherein P_{cm}' represented by the following equation (2) is 0.17 or less:

$$P_{cm}' = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

23. (New) The hot-rolled steel strip according to Claim 19;

further comprising at least one component selected from the group consisting of about 0.1% or less of Cr and about 0.003% or less of B,

wherein $P_{cm'}$ represented by the following equation (2) is 0.17 or less:

$$P_{cm'} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.

24. (New) The hot-rolled steel strip according to Claim 20;

further comprising at least one component selected from the group consisting of about 0.1% or less of Cr and about 0.003% or less of B,

wherein $P_{cm'}$ represented by the following equation (2) is 0.17 or less:

$$P_{cm'} = (\%C) + (\%Si)/30 + ((\%Mn) + (\%Cu) + (\%Cr))/20 + (\%Ni)/60 + (\%Mo)/7 + (\%V)/10$$

Equation (2),

in which (%M) indicates the content of element M on a mass percent basis.